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Richard O. Pope

Iowa State University, ropope@iastate.edu

Jon J. Tollefson

Iowa State University, tolly@iastate.edu

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Alfalfa Weevil Hatch is Upon Us

by Rich Pope, Corn and Soybean Initiative and Jon Tollefson, Department of Entomology

The map below indicates the accumulated degree days for each of the nine Iowa crop reporting districts. Degree-day information indicates that alfalfa weevil larvae should be hatching this week in southern Iowa. In central Iowa counties, weevils should be hatching by the third week of April; and in northern Iowa, weevils should hatch the last full week of April. That means that fields in southern Iowa should be scouted now.

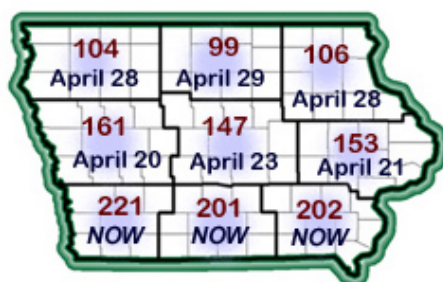


Figure 1. Projected degree days (base 48 °F), Jan. 1 through April 15, 2009 and predicted hatch date.

Scouting should begin at approximately 200 degree days in fields south of I-80, and 250 degree days in fields to the north. Begin scouting in a respective district based on the projected hatching dates. Scouting should start on south-facing hillsides where larvae will hatch first. These areas warm up more quickly than north-facing hillsides.

Management of alfalfa weevil depends upon proper identification, timely scouting to determine populations, and if needed, early cutting or spraying with an insecticide. These larvae can cause significant damage to first-cutting alfalfa, so fields should be scouted.

Larvae remove leaf tissue, beginning with the new leaves at the top of the plant, then work down the stem to other leaves. This feeding reduces forage quality and quantity.

Identification

Alfalfa weevil larvae can be recognized by a very dark head, which is almost black, and a pale green body with a white stripe along the back. When the larvae hatch, they are approximately 1/16 inch in length and may be light yellow in color. After feeding for several days, they turn green. They are 5/16 inch in length when fully grown.



Image 1. Alfalfa weevil larva



Image 2. Clover leaf weevil larva

Alfalfa weevil larvae (Image 1) may be confused with larvae of the clover leaf weevil (Image 2). Clover leaf weevil are much larger, have a light brown head, and often have the white stripe edged with pink. Clover leaf weevil larvae usually hide around the base of the plant during the day, feed mostly in lower leaves at night, and rarely cause economic yield losses. Clover leaf weevil larvae should not be counted as part of the alfalfa weevil sample.

Scouting

Using a sweep net can save some time when you first scout for alfalfa weevil larvae. If larvae are captured in the net, then switch your scouting procedure to the stem-collection method.

- Collect 30 stems and make counts of the larvae in the upper leaves.
- Measure the plant height and then determine the average number of weevil larvae per stem, based upon a 30-stem count.
- Consult Table 1 for the economic thresholds.

The economic threshold depends on crop height, estimated crop value, control costs and the growing conditions stated in Table 1. Use the smaller threshold if alfalfa is drought-stressed or control costs are relatively low (\$7 to \$10 per acre). Use the larger threshold if rainfall is abundant, diseased larvae are present, or control costs are relatively high (\$11 to \$14 per acre). Several commonly available insecticides labeled for alfalfa weevils are listed in Table 2.

Table 1. Economic thresholds based on alfalfa weevil larvae per stem, calculated from a 30-stem sample.

Plant Height (Inches)	\$40/ton	\$70/ton	\$100/ton	Management Decision
4	1.8-2.8	0.8-1.3	0.6-0.8	Re-evaluate in 4 days. if damage and larval numbers are increasing, a long- residual insecticide is recommended to prevent severe yield loss.
6	2.0-3.0	0.8-1.5	0.6-1.0	
8	2.2-3.2	0.9-1.7	0.7-1.2	
10	2.3-3.5	0.9-1.9	0.8-1.4	If alfalfa is in vegetative stages, a short residual insecticide should be used.
12	2.4-3.8	1.0-2.2	0.9-1.6	
14	2.5-4.2	1.2-2.5	1.0-1.8	If >60 percent of alfalfa is in the bud stage, harvest is recommended. Evaluate stubble after harvest. If not Scheduled to be cut within 7 to10 days, a short residual insecticide is recommended.
16	2.6-4.6	1.5-2.8	1.1-2.0	
18	2.7-5.0	1.7-3.1	1.2-2.3	
20	2.8-5.8	2.0-3.4	1.4-2.6	
>20	3.0-7.0	2.4-4.0	1.6-3.0	

Use the smaller threshold if alfalfa is drought-stressed, or control costs are relatively low (\$7 to \$10 per acre). Use a larger threshold if rainfall is abundant, diseased larvae are present, or control costs are relatively high (\$11 to \$14 per acre).

Table 2. Insecticides labeled for alfalfa weevil

Insecticide	Rate per Acre (High and Low Rates)	Harvest Interval (Days)
Baythroid 2 E	1.6-2.8 ounces	7
Furadan 4 F	0.5-2 pints	7-28
Lannate LV	3 pints	0
Lorsban 4 E	1-2 pints	14-21
Mustang Max	2.24-4.0 ounces	3
Pounce 3.2 EC	4-8 ounces	0-14
Sevin XLR+	3 pints	7
Warrior	2.56-3.84 ounces	7

Rich Pope is an extension program specialist in the Corn and Soybean Initiative with responsibilities in integrated pest management. Jon Tollefson is a professor of entomology with responsibilities in research and extension.

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